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Francis Edward Fisher

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EXAMINER

LEO, LEONARD R

ART UNIT

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 14

Application Number: 09/939,356
Filing Date: August 24, 2001
Appellant(s): FISHER ET AL.

Edward M. Weisz
For Appellants

EXAMINER'S ANSWER

MAILED
APR 13 2004
GROUP 3700

This is in response to the appeal brief filed February 3, 2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying there are no related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

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(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Invention

The summary of invention contained in the brief is deficient because the dictionary definitions of the "italicized terms" are not present in the originally filed specification.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1-8 stand or fall together, claim 9 stands by itself and claim 10 stands by itself and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,528,456	TAKAHASHI	6-1996
6,055,158	PAVLOVIC	4-2000
6,230,789	PEI ET AL.	5-2001

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(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi (Figure 4) or Pavlovic (Figures 3-4). Regarding claim 8 in the rejections above, the recitation of “extruded” is considered to be a process limitation in an apparatus claim, which bears no patentable weight in this instance. MPEP 2113

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pavlovic in view of Rosenbaum.

Pavlovic discloses all the claimed limitations except an anodized heat sink body.

Rosenbaum discloses an extruded aluminum heat sink body comprising a mounting land 13 and a plurality of fins 15, wherein the heat sink is black anodized for the purpose of improving heat dissipation (column 2, lines 10-13).

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Since Pavlovic are both from the same field of endeavor and/or analogous art, the purpose disclosed by Rosenbaum would have been recognized in the pertinent art of Pavlovic.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Pavlovic a black anodized heat sink body for the purpose of improving heat dissipation as recognized by Rosenbaum.

Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi or Pavlovic in view of Pei et al.

The device of Takahashi or Pavlovic lacks mechanically fixing by swaging.

Pei et al discloses a heat sink body comprising a folded aluminum sheet 10 having a plurality of mounting lands 144 and a plurality of fins 12, wherein the lands are mounted to element 22 by swaging for the purpose of achieving a strong joint.

Since Takahashi or Pavlovic and Pei et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Pei et al would have been recognized in the pertinent art of Takahashi or Pavlovic.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Takahashi or Pavlovic lands swaged to the elements for the purpose of achieving a strong joint as recognized by Pei et al. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a land projection and element socket, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167.

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(11) Response to Argument

The rejections in view of Bollesen (US 6,125,037), Villaume (US 5,285,350) and Katsui (US 5,689,404) are withdrawn in view of appellants' reliance upon the dictionary term of "land" as newly presented in the Appeal Brief.

Appellants' arguments with respect to Takahashi are not persuasive. The question of the device of Takahashi being "mechanically fixed" arises for the first time during prosecution in the appeal brief. The Examiner acknowledges applicants' specification only discloses a few "suitable mechanical fixing" forms. However, this does not preclude reading a solder joint as being "mechanically fixed." As evidenced by Fujine et al (column 2, lines 42-46 and column 4, lines 8-12), Patel (column 1, lines 65-66), Patel et al (column 1, lines 63-64) and Scheuerer et al (column 3, lines 63-66), "mechanically fixed" is an art recognized term to mean attaching heat sinks to electrical components by soldering and adhesive. The claim limitation is not in a "means plus function" format and is not bound by appellants' specification. Therefore, the solder 10 of Takahashi permits the heat sink body 9 having lands to be "mechanically fixed" to the solderable elements 1 soldered to circuit board 3 by solder bumps 2. The lands of the heat sink body 9 and solderable elements 1 are "contiguous" as per definition 2) nearby, neighboring; adjacent. Lastly, the statement, "the aluminum heat sink body is not receptive to solder" is misleading. It is well known in the art of metal fusion bonding, that aluminum components are solderable. As demonstrated by Takahashi, soldering the heat sink body 9 to element 1 is possible. Appellants' remarks with respect to swaging are better suited in claims 9-10 positively reciting the limitations.

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Appellants' arguments with respect to Pavlovic are not persuasive. With respect to the comments above, the thermally conductive adhesive of Pavlovic permits the heat sink body 24 having lands 46 to be "mechanically fixed" to the solderable elements 18 soldered to circuit board 14. The lands 46 of the heat sink body 24 and solderable elements 18 are "contiguous" as per definition 2) nearby, neighboring; adjacent. The term "contiguous" can mean direct or indirect contact. The definition of "mechanical" also can mean 2) Operated or produced by a machine. Most, if not all electronic devices are assembled by machines. Appellants' remarks with respect to swaging are better suited in claims 9-10 positively reciting the limitations.

Appellants' remarks with respect to the secondary reference of Rosenbaum are moot in view of the grouping of claims.

Appellants' arguments with respect to the secondary reference of Pei et al are not persuasive. The Examiner acknowledges appellants' concerns in the physical incorporation of Pei et al in the devices of Takahashi or Pavlovic. However, one of ordinary skill in the art would recognize the semiconductors 1 of Takahashi and components 18 of Pavlovic have many well known alternative forms. As evidenced by Griffis (US 4,387,413)(column 1, lines 8-14 and column 2, lines 28-38),

"A well-known device package for power transistors and integrated circuits is the TO-220 package."

"Referring to FIG. 1, a TO-220 package transistor 10 is shown mounted on a printed circuit board 24 with a supplementary heat sink 20. The transistor semiconductor element is enclosed in an epoxy body 12. The element is bonded to a metallic slab which extends upward from the body 12 to form a heat sink tab 14. Lead terminals 17, 18 and 19 are connected to the semiconductor element within the body 12 and extend downward from the body into holes in the printed circuit board 24. The transistor 10 is fastened to the supplemental heat sink 20 by a screw 16."

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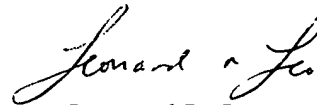
Furthermore, Gottbreht et al (US 4,038,678), Ngo et al (US 4,646,203), Horton (US 4,720,771) and Jordan et al (US 4,847,449) disclose mechanically fixing a heat sink to a solderable electrical component via a screw or rivet is well known in the art, where the rivet is typically swaged.

In conclusion, the claims are broadly met by the prior art of record. The Examiner's remarks are in response to appellants' new presently arguments in the appeal brief and do not change the grounds of rejection. The Examiner believes the claims are capable of being structurally defined over the prior art of record. However, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



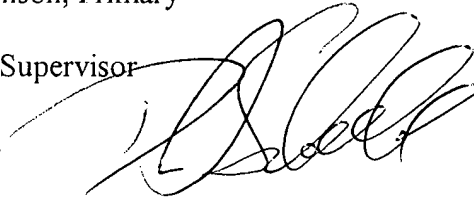
Leonard R. Leo
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March 24, 2004

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